



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/647,170	08/21/2005	Toshiyuki Takabayashi	03487/HG	1777

1933 7590 03/17/2005

FRISHAUF, HOLTZ, GOODMAN & CHICK, PC
767 THIRD AVENUE
25TH FLOOR
NEW YORK, NY 10017-2023

EXAMINER

BERMAN, SUSAN W

ART UNIT PAPER NUMBER

1711

DATE MAILED: 03/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

LD

Office Action Summary	Application No. 10/647,170	Applicant(s) TAKABAYASHI, TOSHIYUKI	
	Examiner Susan W Berman	Art Unit 1711	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 13-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☒ Claim(s) 1-20 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>10/03, 2/04</u> . | 6) <input type="checkbox"/> Other: ____. |

Election/Restrictions

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-12, drawn to a composition comprising a photoacid generator and an oxetane compound, classified in class 522, subclass 31.
- II. Claims 13-20, drawn to a method for ink jet printing, classified in class 427, subclass 466.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case, the composition as claimed can be used in a materially different process, such as for coating a substrate by a method other than ink jet printing, for making a film, or for making a composite.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper. Because these inventions are distinct for the reasons given above and the search required for Group II is not required for Group I, restriction for examination purposes as indicated is proper. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

During a telephone conversation with Marshall J. Chick on March 7, 2005 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-12. Affirmation of this election

Art Unit: 1711

must be made by applicant in replying to this Office action. Claim 13-20 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The use of “formula 1” to refer to two different oxetane compounds set forth in claim 1 (oxetane compound I) and in claim 6 (oxetane compound I’) is confusing since the formula 1 in claim 6 is defined by differences in properties compared with formula 1 in claim 1. It is suggested that the compounds be set forth as “oxetane compound I of the following formula” and “oxetane compound I’ of the following formula”, without using the designation formula 1. Claims 3 and 8 recite an oxetane compound II having one oxetane ring which falls outside the formula set forth in claim 1 or in claim 6. It is not clear what the “compound II” refers to since no formula or name of a compound II is set forth. See [0065] too [0070] in publication 2004/0052967. Claims 3 and 8 recite an oxetane compound III having two or more oxetane rings. It is not clear what the “compound III” refers to since no formula or name of a compound III is set forth. See [0071] too [0084] in publication 2004/0052967.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 1, 2, 6, 7, 11 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by SMITH (4,394,403). Smith discloses compositions comprising an oxetane compound of the formula set forth in column 6, lines 21-38, which corresponds to the formula set forth in claim 1 or in claim 6 wherein the R groups are selected from hydrogen, alkyl, fluoroalkyl or aryl groups. Epoxy compounds and mixtures of cationically curable compounds, as well as pigments, are also taught (column 4, lines 45-47, column 6, lines 47-55, and column 7, line 1). Applications in graphic arts are taught in column 7, lines 3-20. Ink jet printing and the necessary viscosities for ink jet printing are not mentioned. Smith does not mention C-O bond lengths in the oxetane compounds or charge on the oxygen atom, however, since the species of the disclosed compounds and species of the claimed compounds overlap, it would be expected that these properties would be inherent to the species disclosed, in the absence of evidence to the contrary.

Claims 1, 3, 4, 6, 8, 9, 11 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by IGARASHI et al (5,674,922). Igarashi et al disclose compositions comprising an oxetane compound of formula (1) set forth in column 2, lines 37-65, which corresponds to the formula set forth in claim 1 or in claim 6 wherein the R groups are selected from hydrogen, alkyl, fluoroalkyl, allyl, aryl, furyl or thienyl

Art Unit: 1711

groups, or mixture thereof. Epoxy compounds and mixtures of cationically curable compounds, as well as pigments, are also taught (column 2, line 66, to column 5, line 60). Photoacid generators and addition of pigment are taught in column 5, line 61, to column 6, line 63. See examples 1-3. Application as printing inks is taught in column 7, lines 47-53. Ink jet printing and the necessary viscosities for ink jet printing are not mentioned. Igarashi et al do not mention C-O bond lengths in the oxetane compounds or charge on the oxygen atom, however, since the species of the disclosed compounds and species of the claimed compounds overlap, it would be expected that these properties would be inherent to the species disclosed, in the absence of evidence to the contrary.

Claims 1, 3-6 and 8-12 are rejected under 35 U.S.C. 102(e) as being anticipated by HIRAI et al (6,846,074). Hirai et al disclose compositions for ink jet printing comprising an oxetane compound of formula 1 set forth in column 7, line 28, to column 8, line 8, which corresponds to the formula set forth in claim 1 or in claim 6 wherein the R groups are selected from hydrogen, alkyl, fluoroalkyl, allyl, aryl, furyl or thienyl groups, preferred for obtaining a composition excellent in adhesiveness and low viscosity. Di-functional oxetane compounds are taught in column 8-11. Epoxy compounds and mixtures of cationically curable compounds are also taught (column 6, line 38, to column 7, line 10). Photoacid generators and addition of pigment are taught in column 11, line 57, to column 12, line 23. See Table 11, Ink set A. Ink jet printing and the necessary viscosities for ink jet printing are taught in column 2, lines 1-3. Hirai et al do not mention C-O bond lengths in the oxetane compounds or charge on the oxygen atom, however, since the species of the disclosed compounds and species of the claimed compounds overlap, it would be expected that these properties would be inherent to the species disclosed, in the absence of evidence to the contrary.

Claims 1-4 and 6-9 are rejected under 35 U.S.C. 102(e) as being anticipated by SASAKI et al (6,794,451). Sasaki et al disclose compositions comprising an oxetane compound of formulas 5, 3 or 7 set forth in column 5, lines 1-22, and column 6, lines 8-49, which corresponds to the formula set forth in

Art Unit: 1711

claim 1 or in claim 6 wherein the R groups are selected from hydrogen, alkyl, or aryl groups. Epoxy compounds, polyfunctional oxetane or epoxy monomers, mixtures of cationically curable compounds and onium salts initiators are also taught (column 6, lines 50-65, column 6, line 47, to column 8, line 67). Ink jet printing and the necessary viscosities for ink jet printing are not mentioned. Sasaki et al do not mention C-O bond lengths in the oxetane compounds or charge on the oxygen atom, however, since the species of the disclosed compounds and species of the claimed compounds overlap, it would be expected that these properties would be inherent to the species disclosed, in the absence of evidence to the contrary.

Claims 1-2 and 6-7 are rejected under 35 U.S.C. 102(e) as being anticipated by US Publication No. 2004/0023157 (FEIRRING et al). Feiring et al disclose compositions comprising an oxetane compound of formula II 5, 3 or 7 set forth in paragraph [0016] to [0017], [0031] and examples 1 and 2, which corresponds to the formula set forth in claim 1 or in claim 6 wherein the R groups are selected from fluoroalkyl, hydrogen, or alkyl groups. Onium salt photoacid generators are taught [0068]-[0069]. Dissolution inhibitors containing one or two oxetane groups or epoxy groups are taught in [0082] to [0085]. Imagewise exposure is taught in [0093]. Ink jet printing and the necessary viscosities for ink jet printing are not mentioned. Feiring et al do not mention C-O bond lengths in the oxetane compounds or charge on the oxygen atom, however, since the species of the disclosed compounds and species of the claimed compounds overlap, it would be expected that these properties would be inherent to the species disclosed, in the absence of evidence to the contrary.

Claims 1, 3, 4, 6, 8 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by KURIYAMA et al (6,365,760). Kuriyama et al disclose oxetanyl-containing naphthalene or biphenyl compounds and compositions comprising diaryliodonium or triarylsulfonium salts that release strong acid by photoactivation. See formulas (I) through (IV).

Art Unit: 1711

With respect to each of the rejections set forth above and the claim limitation reciting the C-O bond distance, the burden is hereby shifted to applicant to establish by effective argument and/or objective evidence that the prior art product(s) or process(es) do not necessarily possess the characteristics of the claimed products or processes. Note In re Fitzgerald, 205 USPQ 594 (CCPA 1980). The reference discloses all the limitations of the claim(s) except a property or function and the examiner cannot determine whether or not the reference inherently possesses properties or functions which anticipate the claimed invention. See MPEP 2112-2112.02.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-12 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-7 of copending Application No. 10/648579 (Publication No. 2004/0052968) in view of Hirai et al (6,846,074). Although the conflicting claims are

Art Unit: 1711

not identical, they are not patentably distinct from each other for the following reasons. Claims 1-7 of SN '579 set forth compositions comprising a photoacid generating agent and an oxetane compound or mixtures of oxetane, epoxy and/or vinyl ether compounds, with or without a pigment and having the same viscosity as the compositions set forth in the instant claims. It would have been obvious to one skilled in the art at the time of the invention to employ an oxetane compound of formula 1 disclosed by Hirai et al as the oxetane compounds in the compositions claimed in SN '579 because Hirai et al teach that the compounds are particularly preferred since the compositions comprising the oxetanes are excellent in adhesiveness and low viscosity. One of ordinary skill in the art at the time of the invention would have been motivated by a reasonable expectation of providing a composition for ink jet printing having the required viscosity and adhesiveness, as taught by Hirai et al.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

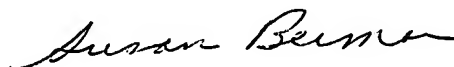
WO 00/568002, or equivalent US 6,617,418 (Magnusson et al), discloses compositions comprising an oxetane compound of the formula set forth in column 2, line 44, to column 3, line 8, which corresponds to the formula set forth in claim 1 or in claim 6 wherein the R groups are selected from alkyl or aryl groups. The difference is that the compounds taught by Magnusson et al contain an R₂ group that is hydroxy-substituted. Sugiyama et al (6,495,636) disclose compositions comprising an oxetane compound of formula (1) set forth in the Abstract, which corresponds to the formula set forth in claim 1 or in claim 6 wherein the R groups are selected from hydrogen, alkyl, fluoroalkyl, allyl, aryl, furyl or thienyl groups. The difference is the vinyl ether substituent present in the oxetane compound. Each of Weinmann et al (6,084,004) and Moszner et al (6,284,898) disclose compositions comprising a photoacid generator and an oxetane compound different from the instantly claimed oxetane compound.

Art Unit: 1711

Any-inquiry concerning this communication or earlier communications from the examiner should be directed to Susan W Berman whose telephone number is 571 272 1067. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 571 272 1078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Susan W Berman
Primary Examiner
Art Unit 1711

SB
3/10/05